Charge exchange processes that make comets radiate

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Appendices

A Atomic Units

Atomic units are based on typical dimensions of the hydrogen atom. The *length* is the classical radius of the hydrogen electron orbital in the 1*s* ground state. The *velocity* is the classical hydrogen ground state electron velocity and *time* is given by the ratio of length and velocity. *Charge* is the charge of the electron, *mass* is its mass and *energy* is the sum of kinetic and potential energy of the hydrogen 1s electron (=2×13.604 eV).

atomic unit	symbol	value	SI unit
length	a_0	5.2918×10^{-11}	m
velocity	αc	2.1877×10^{6}	m/s
time	$a_0(\alpha c)^{-1}$	2.4188×10^{-17}	s
charge	e	1.6022×10^{-19}	C
mass	m_e	9.1095×10^{-31}	kg
energy	$E_0=m(\alpha c)^2$	4.3593×10^{-18}	J
angular momentum	$\hbar$	1.0546×10^{-34}	Js

Table A.1: Conversion of atomic units into SI units.